UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION DIVISION (7505P)

27/JUL/2018

MEMORANDUM: Acute Toxicity Data Evaluation Record (DER) for CSI 16-189 Concentrate

Subject:	Name of Pesticide Product:	CSI 16-189 Concentrate
	EPA File Symbol	53883-UUU
	DP Barcode:	D447435
	Decision #:	536775
	Action Code:	R314
	PC Code:	128966 (S)-Hydroprene
		124002 Novaluron
		129032 Pyriproxyfen

From: Tracy Keigwin, Biologist
Chemistry, Inerts and Toxicology Assessment Branch
Registration Division (7505P)

Through: PV Shah, PhD
Chemistry, Inerts and Toxicology Assessment Branch
Registration Division (7505P)

P.V. Shah 7/30/2018

To: Matthew Sellner, RM 10
Invertebrate and vertebrate Branch II
Registration Division (7505P)

Applicant: Control Solutions, Inc.
5903 Genoa Red Bluff
Pasadena, TX 77507-1041

FORMULATION FROM THE PRODUCT LABEL:

Active Ingredient(s):	% by wt.
(S)-Hydroprene	9.0
Novaluron	2.6
Pyriproxyfen	2.6
Other Ingredient(s):	85.8
	Total: 100.00%

ACTION REQUESTED: The Risk Manager requests a review of acute toxicity studies submitted in support of EPA File Symbol 53883-UUU, CSI 16-189 Concentrate.

BACKGROUND: Control Solutions, Inc. has submitted acute toxicity data in support of CSI 16-189 Concentrate, EPA File Symbol 53883-UUU. The following acute toxicity data have been submitted: MRID Nos. 50468403 (870.1100), 50468404 (870.1200), 50468405 (870.1300), 50468406 (870.2400), 50468407 (870.2500) and 50468408 (870.2600). The product label states that CSI 16-189 Concentrate is an insect growth regulator that is effective against listed pests for application to listed use sites.

GLP: All studies were conducted in accordance with GLP with the exception that in MRID 50468408 "...the stability, uniformity of mixture and verification of concentration of alpha-Hexylcinnamaldehyde (HCA), ≥ 95%, in its carriers were not determined".

DEVIATIONS: None

COMMENTS AND RECOMMENDATIONS:
1) The 6 submitted acute toxicity studies are acceptable. The acute toxicity profile for EPA File Symbol 53883-UUU, CSI 16-189 Concentrate is as follows:

acute oral toxicity	IV	Acceptable	MRID 50468403
acute dermal toxicity	IV	Acceptable	MRID 50468404
acute inhalation toxicity	IV	Acceptable	MRID 50468405
primary eye irritation	III	Acceptable	MRID 50468406
primary skin irritation	IV	Acceptable	MRID 50468407
dermal sensitization	Negative	Acceptable	MRID 50468408

2) Protective eyewear is mandatory when handling this product. Although this product is Category III for primary eye irritation, significant eye irritation was observed in 2/3 test animals at the 24-hour observation (eye irritation scores of 42 and 59, respectively).

3) The product chemistry team must approve the Basic formulation (dated 12-8-2017) before this action can be finalized.

The following is the precautionary language for this product (next page):

PRODUCT ID #: 53883-UUU

PRODUCT NAME: CSI 16-189 Concentrate

PRECAUTIONARY STATEMENTS

SIGNAL WORD: CAUTION

Hazards to Humans and Domestic Animals:
Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Wear protective eyewear, a long sleeve shirt, long pants, shoes and socks. Remove and wash contaminated clothing before reuse.

First Aid:

If in eyes:
-Hold eye open and rinse slowly and gently with water for 15-20 minutes.
-Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
-Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

USER SAFETY RECOMMENDATIONS:
User should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

User should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Reviewer: Tracy Keigwin **Date: July 27, 2018**

Risk Manager (EPA): 10

The following table is the Acute Toxicity Data Evaluation Record (DER) for the six studies submitted in support of EPA File Symbol 53883-UUU:

1. DP BARCODE: 447435				
2. PC CODES: 128966, 124002 and 129032				
3. CURRENT DATE: July 27, 2018				
4. TEST MATERIAL: CSI 16-189 Concentrate, Formula: 103-052 (PSL Reference number 171013-7R; Purity: S-Hydroprene 9.0%, Novaluron 2.6%, Pyriproxyfen 2.6%; liquid)				
Study/Species/Lab Study # /Date	**MRID**	**Results**	**Tox Cat**	**Core Grade**
Acute oral toxicity/rat PSL (Dayton, NJ) Study #46673/December 1, 2017 OCSPP 870.1100; OECD 425	50468403	LD_{50} Females > 5000 mg/kg bw (Limit Test). Species/Strain: Rat/Sprague-Dawley derived, albino. Dose: 5000 mg/kg (4 rats). One rat died within 3 days of dosing. Prior to death, this animal exhibited irregular respiration, ano-genital staining, prone posture, reduced fecal volume, and was hypoactive. Of the surviving test animals 2 exhibited irregular respiration, recovering by study day 2. No clinical signs observed in the remaining surviving rat. At necropsy, the decedent exhibited a discoloration of the liver and spleen. No gross abnormalities observed in the surviving rats at necropsy.	IV	A
Acute dermal toxicity/rat PSL (Dayton, NJ) Study #46674/November 22, 2017 OCSPP 870.1200; OECD 402	50468404	LD_{50} > 5000 mg/kg (both sexes-5 males and 5 females tested). Species/Strain: Rat/Sprague-Dawley derived, albino. Application: An application of 5000 mg/kg bw of test substance was applied to the dose area and covered with a 2-inch x 3-inch gauze pad. The pad and entire trunk of each test animal was covered with Durapore tape. Exposure duration: 24 hours. Results: No deaths. Dermal irritation was noted in 1/5 males and 4/5 females, resolving in all by study day 10. No other clinical signs observed. No gross abnormalities observed at necropsy.	IV	A

Acute inhalation toxicity/rat PSL (Dayton, NJ) Study #46675/November 22, 2017 OCSPP 870.1300; OECD 403	50468405	LC_{50} > 2.02 mg/L (Gravimetric; nose-only; 5 males and 5 females tested; MMAD=2.62 µm; GSD=2.06; nominal concentration: 7.63 mg/L). Species/Strain: Rat/Sprague-Dawley derived, albino. Exposure duration: "At least 4 hours". Results: No deaths. All exhibited irregular respiration following exposure, recovering by study day 1. No other clinical signs observed. No gross abnormalities observed at necropsy	IV	A
Primary eye irritation/ rabbit PSL (Dayton, NJ) Study #46676/December 1, 2017 OCSPP 870.2400; OECD 405	50468406	MMTS = 37.3 (at 24 hours). Species/Strain: Rabbit/New Zealand albino (3 female rabbits). Procedure: A systemic anesthetic was administered prior to instillation and at "appropriate intervals" to relieve potential animal discomfort. In addition, 1-2 drops of an ocular anesthetic were placed in both the control and treated eyes prior to instillation. One tenth of a milliliter of undiluted test substance was instilled into the conjunctival sac of the right eye of each test animal. The upper and lower lids were gently held together for approximately 1 second to minimize test substance loss. Results: No iritis observed. Grade 1-3 corneal opacity was observed in 3/3 test animals from the 24-hour observation through the 48-hour observation, continuing in 1/3 through the 72-hour observation. Grades 2-4 redness and/or chemosis was observed in 3/3 at the 1-hour observation, continuing in 2/3 through the 72-hour observation and in 1/3 through the day 4 observation. Note that grade 2-3 discharge (not considered a positive response) was observed in 3/3 at the 1-hour observation. All scores "0" by the day 10 observation.	III	A

Primary dermal irritation/ rabbit PSL (Dayton, NJ) Study #46677/November 30, 2017 OCSPP 870.2500; OECD 404	50468407	PDII = 1.4. Slight dermal irritant. Species/Strain: Rabbit/New Zealand albino (3 test animals). Application: 0.5 ml of test substance was applied to a 6 cm^2 clipped dose site and covered with a 1-inch x 1-inch gauze pad. The pad and entire trunk of each test animal was covered with semi-occlusive Micropore tape. In addition, test animals wore Elizabethan collars. Exposure duration: 4 hours. Results: Grade 1 erythema and/or edema was observed in 3/3 at the 30-60 minute and 72-hour observations and in 2/3 at the 24 and 48-hour observations. All scores "0" by the day 7 observation. Note that desquamation was observed in 2/3 at the 48-hour and 72-hour observations, and in 3/3 at the day 7 and day 10 observations. Minimal desquamation was observed in 3/3 at the day 14 observation.	IV	A
Dermal sensitization (Buehler)/Guinea Pig PSL (Dayton, NJ) Study #46678/December 7, 2017 OCSPP 870.2600; OECD 406	50468408	Product is **not** a dermal sensitizer. Species/Strain: Guinea pig/Hartley albino. Application: 0.4 mL of undiluted test substance was selected for both induction and challenge applications. The test substance was applied via an occlusive 25mm Hill Top Chamber and secured with non-allergenic Durapore adhesive tape. Exposure time: 6 hours. Results: No positive response (grade 1 or higher) was observed in either the test or naïve control animals at Challenge. Grade 1 erythema was observed in 6/10 positive control (alpha-Hexylcinnamaldehyde, ≥ 95% (HCA) animals at the 24-hour observation and in 5/10 at the 48-hour observation (PSL Study #46443, September 12-October 13, 2017; acceptable).	Negative	A

Core Grade Key: A =Acceptable, S = Supplementary, U = Unacceptable, D = Data Gap